

[4910-13-U]

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

14 CFR Part 39 [66 FR 9031 2/6/2001]

[Docket No. 2001-SW-02-AD; Amendment 39-12100; AD 2001-01-52]

RIN 2120-AA64

### Airworthiness Directives; Bell Helicopter Textron Canada Model 407 Helicopters

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

**SUMMARY:** This document publishes in the **Federal Register** an amendment adopting Airworthiness Directive (AD) 2001-01-52, which was sent previously to all known U.S. owners and operators of Bell Helicopter Textron Canada (BHTC) Model 407 helicopters by individual letters. This AD requires, before further flight, reducing the maximum approved never exceed velocity (Vne); inserting a copy of this AD into the Rotorcraft Flight Manual (RFM); installing a temporary placard on the flight instrument panel to indicate the reduced Vne limit; and installing a new redline Vne limit on all airspeed indicators. This amendment is prompted by an accident resulting from a suspected tail rotor strike to the tailboom. The actions specified by this AD are intended to prevent tail rotor blades from striking the tailboom, separation of the aft section of the tailboom with the tail rotor gearbox and vertical fin, and subsequent loss of control of the helicopter.

**DATES:** Effective February 21, 2001, to all persons except those persons to whom it was made immediately effective by Emergency AD 2001-01-52, issued on January 10, 2001, which contained the requirements of this amendment.

Comments for inclusion in the Rules Docket must be received on or before April 9, 2001.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the Regional Counsel, Southwest Region, Attention: Rules Docket No. 2001-SW-02-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. You may also send comments electronically to the Rules Docket at the following address: 9-asw-adcomments@faa.gov.

**FOR FURTHER INFORMATION CONTACT:** Sharon Miles, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Regulations Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5122, fax (817) 222-5961.

### SUPPLEMENTARY INFORMATION

On September 25, 1998, the FAA issued Priority Letter AD 98-20-41, Docket No. 98-SW-53-AD, for BHTC Model 407 helicopters, which restricted the airspeed to 25 knots indicated airspeed (KIAS) less than the Vne airspeeds indicated on the airspeed limitation placard. The priority letter also required installing an airspeed limitation placard; marking a redline at a Vne of 115 KIAS; applying a red arc from 115 to 140 KIAS on all airspeed indicators; and revising the Limitations section of the RFM that requires pilots to maintain yaw trim within one ball width of the centered position of the turn and bank (slip) indicator. That action was prompted by two accidents involving in-flight tail rotor blade strikes against the tailboom on BHTC Model 407 helicopters.

Persons aboard both helicopters reported hearing a loud “bang” immediately before losing directional control of the helicopter. Subsequent inspection of the helicopters revealed that the aft section of the tailboom, including the tail rotor, the tail rotor gearbox, and the vertical fin, had separated from the helicopters in-flight. In both cases, inspection of the retrieved tailbooms confirmed that the tailbooms had been struck at least three times by the rotating tail rotor blades. The specific cause of these two in-flight tail rotor blade strikes against the tailboom has not been determined; however, flight test data indicated that tail rotor blade strikes were more likely to occur at higher airspeeds and altitudes. The data indicated that the cause of the tail rotor strikes may be excessive tail rotor blade flapping. Tail rotor blade flapping may be aggravated by left pedal input. Excessive tail rotor flapping, if not corrected, could result in the tail rotor blades striking the tailboom, separation of the aft section of the tailboom with the tail rotor gearbox and vertical fin, and subsequent loss of control of the helicopter. Transport Canada, which is the airworthiness authority for Canada, issued AD CF-98-36, dated September 25, 1998, to require that the airspeed be reduced to minimize the risk of a tailboom strike during flight.

After issuing Priority Letter AD 98-20-41, BHTC issued Technical Bulletin No. 407-98-13, dated December 12, 1998 (TB), which recommended a reduction in Vne of only 15 KIAS with the installation of a left pedal stop to limit maximum tail rotor blade pitch. Transport Canada notified the FAA that an unsafe condition may continue to exist on BHTC Model 407 helicopters. Transport Canada advised that installing the tail rotor pitch-limiting left-pedal stop in accordance with the TB and further reducing the Vne were required to minimize the risk of a tailboom strike during flight. Transport Canada classified the TB as mandatory, and issued AD CF-98-36R3, dated March 5, 1999, to ensure the continued airworthiness of these helicopters in Canada. That action was prompted by a third accident involving an in-flight tail rotor blade strike against the tailboom on BHTC Model 407 helicopters. The pilot in that accident reported that the helicopter was in straight and level cruise flight at 110 KIAS in non-turbulent conditions when the helicopter experienced an uncommanded left pedal hardover. The pilot reported that this uncommanded full left pedal movement was followed by a loud “bang” and then a loss of directional control of the helicopter. Subsequent inspection of the helicopter revealed that the aft section of the tailboom, including the tail rotor, the tail rotor gearbox, and the vertical fin, had separated from the helicopter in-flight. The helicopter did not have the tail rotor pitch-limiting left-pedal stop installed.

As a result of BHTC issuing the TB and because of the additional accident, the FAA issued Priority Letter AD 99-06-15, Docket No. 99-SW-16-AD, on March 9, 1999, that superseded Priority Letter AD 98-20-41. AD 99-06-15 was published in the Federal Register as Amendment 39-11111 (64 FR 16801, April 7, 1999). AD 99-06-15 required, before further flight, installing a tail rotor pitch-limiting left-pedal stop and adjusting the rigging of the directional controls; installing a new airspeed limitation placard; marking a new Vne limit of 100 KIAS on all airspeed indicators; and revising the RFM to reduce the airspeed limitation further and to maintain the previously revised yaw-operational limitations. The AD was intended to prevent the tail rotor blades from striking the tailboom, which could result in separation of the aft section of the tailboom with the tail rotor gearbox and vertical fin, and subsequent loss of control of the helicopter.

After the FAA issued AD 99-06-15, the manufacturer made a design change to the tail rotor system to eliminate tail rotor strikes to the tailboom and also made design changes to the pedal stop. Subsequently, the FAA issued superseding AD 2000-14-16, Docket No. 2000-SW-10-AD (65 FR 45703, July 25, 2000) which requires, before further flight after January 31, 2001, installing a redesigned tail rotor system and modifying the vertical fin and horizontal stabilizer to allow restoring the Vne to 140 KIAS.

Since the issuance of that AD, there has been an accident in which a helicopter flying at approximately 140 KIAS was destroyed on water impact following an in-flight occurrence. One of the suspected contributing factors is an in-flight tail rotor strike to the tailboom. As a precautionary

measure, pending further investigation into the accident and before the suspected in-flight tail rotor strike can be confirmed or eliminated, Transport Canada issued AD No. CF-2001-01, dated January 8, 2001, to reduce Vne speed. The FAA agrees with this precautionary measure.

Since the unsafe condition described is likely to exist or develop on other BHTC Model 407 helicopters of the same type design, the FAA issued Emergency AD 2001-01-52 to prevent tail rotor blades from striking the tailboom, separation of the aft section of the tailboom with the tail rotor gearbox and vertical fin, and subsequent loss of control of the helicopter. The AD requires the following before further flight:

- Reducing the maximum approved Vne to 100 KIAS if an airspeed actuated pedal stop is not installed or to 110 KIAS if an airspeed actuated pedal stop is installed;
- Inserting a copy of this AD into the RFM;
- Installing a temporary placard on the flight instrument panel to indicate the reduced Vne limit; and
- Installing a new redline Vne limit at either 100 or 110 KIAS, as applicable, on all airspeed indicators.

The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the structural integrity of the helicopter. Therefore, the actions previously listed are required before further flight, and this AD must be issued immediately.

Since it was found that immediate corrective action was required, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and good cause existed to make the AD effective immediately by individual letters issued on January 10, 2001, to all known U.S. owners and operators of BHTC Model 407 helicopters. These conditions still exist, and the AD is hereby published in the **Federal Register** as an amendment to section 39.13 of the Federal Aviation Regulations (14 CFR 39.13) to make it effective to all persons. However, there was an error in paragraphs (a) and (b) of the emergency AD. The word "minimum" was inadvertently used when the intent was to use the word "maximum." The correction is made in this AD; the FAA has determined that this change will neither increase the economic burden on an operator nor increase the scope of the AD.

The FAA estimates that 200 helicopters of U.S. registry will be affected by this AD. It will take approximately 3 work hours per helicopter to manufacture and install each airspeed limitation placard. The average labor rate is \$60 per work hour. Required parts will cost approximately \$10 per helicopter. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$38,000 to install an airspeed limitation placard on all helicopters in the U.S. fleet.

### **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption "ADDRESSES." All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their mailed comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 2001-SW-02-AD." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

#### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "av-info.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2001-01-52 BELL HELICOPTER TEXTRON CANADA:** Amendment 39-12100. Docket No. 2001-SW-02-AD.

**Applicability:** Model 407 helicopters, certificated in any category.

Note 1: This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (f) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required before further flight, unless accomplished previously.

To prevent the tail rotor blades from striking the tailboom, separation of the aft section of the tailboom with the tail rotor gearbox and vertical fin, and subsequent loss of control of the helicopter, accomplish the following:

- (a) For helicopters that do not have an airspeed actuated pedal stop installed, reduce the maximum approved placarded never exceed velocity (Vne) to 100 knots indicated airspeed (KIAS) except in autorotation where it remains 100 KIAS maximum or where the basic flight manual or operation installation limitations indicate less than these values.
- (b) For helicopters that have an airspeed actuated pedal stop installed, reduce the maximum approved placarded Vne to 110 KIAS except in autorotation where it remains 100 KIAS maximum or where the basic flight manual or operation installation limitations indicate less than these values.
- (c) Insert a copy of this AD into the Rotorcraft Flight Manual (BHT-407-FM-1) at the front of the Flight Limitations Section.
- (d) Install a temporary locally manufactured placard on the flight instrument panel over the existing Vne placard to indicate the new Vne limit specified in paragraph (a) or (b) of this AD.
- (e) Install a new redline Vne limit at either 100 or 110 KIAS on all airspeed indicators, corresponding to the new limit specified in the appropriate paragraph of this AD. Obscure or remove all previous redline

limits. If the new redline is installed on the instrument glass, also install a slippage mark on the glass and on the instrument case.

(f) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Regulations Group, Rotorcraft Directorate, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Regulations Group.

Note 2: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Regulations Group.

(g) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the helicopter to a location where the requirements of this AD can be accomplished provided that the Vne limits specified in this AD are not exceeded.

(h) This amendment becomes effective on February 21, 2001, to all persons except those persons to whom it was made immediately effective by Emergency AD 2001-01-52, issued January 10, 2001, which contained the requirements of this amendment.

Note 3: The subject of this AD is addressed in Transport Canada (Canada) AD No. CF-2001-01, dated January 8, 2001.

**FOR FURTHER INFORMATION CONTACT:** Sharon Miles, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Regulations Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5122, fax (817) 222-5961.

Issued in Fort Worth, Texas, on January 30, 2001.

Eric Bries, Acting Manager, Rotorcraft Directorate, Aircraft Certification Service.